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ABSTRACT

In 1982 vocational schools participated in Pennsylvania's state assessment program, the Educational Quality Assessment (EQA). When EQA data were tabulated, the vocational school scores were low in comparison to the comprehensive high school scores. An analysis of the vocational school and comprehensive high school scores using state assessment data was performed. School raw scores were calculated for a cognitive area by finding the mean number of items correct for all grade 11 students assessed in the school. Although matrix sampling was employed, school mean scores were calculated based on the total number of items for a goal area. The socio-economic status, teacher perceptions on school conditions, and student perceptions on selected variables were used to analyze differences in school conditions between the schools. Results indicated that: (1) vocational schools scored lower than comprehensive high schools in 13 of 14 areas, (2) full-time vocational schools scored higher than all vocational schools, (3) non-vocational students had a statistically significant advantage in all 21 school condition variables, (4) vocational schools and vocational students had their own unique characteristics, and (5) high socio-economic vocational students scored lower than high socio-economic non-vocational students. (Author/PN)

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AN INVESTIGATION OF THE DIFFERENCE BETWEEN PENNSYLVANIA VOCATIONAL SCHOOL AND COMPREHENSIVE HIGH SCHOOL ASSESSMENT SCORES

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Title: An Investigation of the Difference Between Pennsylvania Vocational[1] School and Comprehensive High School Assessment Scores

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Abstract

An analysis of Pennsylvania vocational school and comprehensive high school scores using state assessment data was performed. The following conclusions were advanced based on the data: (1) vocational schools scored lower than comprehensive high schools in thirteen of fourteen areas, (2) full-time vocational schools scored higher than all vocational schools, (3) non-vocational students had a statistically significant advantage in all twenty-one school condition variables, (4) vocational schools and vocational students had their own unique characteristics and (5) high socio-economic vocational students scored lower than high socio-economic non-vocational students.

[1]Note: In Pennsylvania, the system of occupational related high schools consists mostly of area vocational-technical schools. Their programs include technical fields, such as electronics and data processing, as well as vocational fields, such as welding, automobile repair, and construction trades. However, in this paper for brevity the schools are referred to simply as vocational schools.

AN INVESTIGATION OF THE DIFFERENCE BETWEEN PENNSYLVANIA VOCATIONAL SCHOOL AND COMPREHENSIVE HIGH SCHOOL ASSESSMENT SCORES

INTRODUCTION

Pennsylvania's state assessment program, the Educational Quality Assessment (EQA), provides a school building assessment on fourteen areas related to the state adopted goals of quality education. School data and student data include scores on the following fourteen goal areas: self-esteem, understanding others, reading, writing, mathematics, interest in school and learning, societal responsibility, knowledge of law/government, health practices, creative activities, career awareness, appreciating human accomplishments, knowledge of human accomplishments and information usage. Appendix A contains a summary of the fourteen instruments including a scale description, number of items, sample items and response choices. It should be noted the EQA survey measures the performance of only grade eleven students at the high school level. This information was included in an extensive twenty-four page report returned to each school.

In 1982 both full-time and part-time vocational schools participated in the EQA program. When EQA data were tabulated for vocational schools in 1982, the school scores were rather low in comparision to Pennsylvania comprehensive high schools. To provide vocational school administrators with relevant comparative data percentile norms were developed separately for vocational schools. Also, the EQA program provides comparative data on thirty-one school condition variables reflecting teacher and student perceptions of the school, socio-economic status and other school related variables. See Appendix B for a review of each condition variable including a description of the measure,

weighting and what higher scores indicate. Vocational school administrators were provided separate vocational school norms on the school condition variables.

The principal intent of the present study was to investigate the difference between Pennsylvania vocational school student and comprehensive high school student assessment scores. This investigation was conducted, because rather large differences were found to exist between student scores in the two types (vocational and comprehensive) of Pennsylvania schools. Those differences were on a wide range of assessment topics. Also, differences were found between vocational and comprehensive high schools on the thirty-one school condition variables. Hence, the magnitude of the differences and possible explanations for those differences were the major topics of the study.

METHODS

EQA raw scores were available for both vocational and comprehensive high schools and for individual students attending the two types of schools. Hence, both school mean data and student data were available. School raw scores were calculated for a cognitive area by finding the mean number of items correct for all grade eleven students assessed in the school. It should be noted the EQA program employs matrix sampling. This is a method whereby each student takes only a portion of the total number of items for every measured goal area. Although matrix sampling is employed, school mean scores are calculated based on the total number of items for a goal area. That is, for mathematics there was a total of sixty items, this resulted in a possible mean school score range of zero to sixty. In matrix sampling each student responded to only fifteen

mathematics items. This resulted in student math scores having a possible range of zero to fifteen. It is important to note this difference in school and student score ranges when reviewing the analysis of data.

Each year a sample representative of Pennsylvania's comprehensive high schools is selected. The sample, which consists of about 33 percent of all Pennsylvania school districts, is used to derive percentile ranks. The vocational and comprehensive high school raw scores and percentiles were used to illustrate the difference between the two types of high schools in the fourteen goal areas assessed by EQA. Both student and school mean data were analyzed to determine the difference between vocational and comprehensive high schools. To determine if the raw scores were statistically different between the two student categories a Behrens-Fisher t'test was employed. Also, given the large sample, a measure of "effect size" (Cohen, 1969) was calculated by forming a ratio of the observed differences to the population standard deviation. This was done to assist in evaluating the significant differences found using the t'test.

In an effort to investigate the difference between the school scores, the thirty-one condition variable scores were examined. Both vocational and comprehensive high schools had responded to the same set of thirty-one condition variables. Thus, the socio-economic status, teacher perceptions on school conditions and student perceptions on selected variables were used to analyze differences in school conditions between vocational schools and comprehensive high schools. Behrens-Fisher t'tests were used to determine if a statistically significant difference existed between the two types of schools on selected condition variables. Where statistically significant differences existed, this

was considered to be evidence that illustrated the vocational schools were different in the operational conditions from comprehensive high schools. To control for the larger sample size "effect size" was calculated using the vocational and comprehensive high school data.

The analysis of condition variables was continued using student data. Twenty-one condition variables were employed to analyze the differences between vocational and comprehensive high school students. Behrens-Fisher t'tests and the "effect size" measure were employed in this analysis.

Correlation coefficients were calculated between the condition variables and the fourteen goal area scores. One set of correlation coefficients was calculated using student data. A second set of correlation coefficients was calculated using school mean data. The correlations were to provide insight into the statistical relationship between condition variables and goal areas. Selected condition variables were analyzed to determine if similar statistical relationships exist in vocational and comprehensive high schools.

An attempt was made to select a sample of non-vocational high school students that matched those found in vocational schools on one condition variable, socio-economic status. This task was designed to assist in analyzing the difference between non-vocational and vocational scores. The raw scores for socio-economic status levels were calculated for both non-vocational and vocational students.

DATA SOURCE

Data for this investigation were gathered from most of the Pennsylvania vocational schools. A total of nine full-time and sixty-nine part-time vocational schools responded to the EQA survey. Both full-time and part-time vocational schools were included in the 1982 survey. Over 20,500 vocational school students surveyed responded to each of the fourteen EQA measures.

Data were available for a large sample of Pennsylvania comprehensive high schools. Of the 501 Pennsylvania school districts, data were available from 216 school districts in 1982. A norm sample of 166 school districts was selected to be representative of the state based on school district size and wealth. In 1982, the Pennsylvania grade eleven norm sample of comprehensive high schools included 195 schools and over 37,000 students.

Scores for vocational high schools and comprehensive high schools were available on magnetic tape from the EQA records. Both student raw scores and school mean raw scores were available for 1982. Also a percentile rank was available for schools as a part of the records.

The EQA package was used in the same form for both vocational and comprehensive high schools. Thus, an assessment package designed to be used in Pennsylvania comprehensive high schools was administered in vocational schools. The EQA Division employees had some reservations about using the assessment package designed for comprehensive high schools in a vocational school setting. These reservations were based on the fact that comprehensive high school programs were assessed by EQA while vocational school subjects may not be

included in the assessment content. Although some problems were recognized, the results did provide comparative data for vocational schools on fourteen goal areas related to comprehensive high school programs.

RESULTS

School Goal Scores

As stated previously, the discrepancy between vocational and comprehensive high school scores was the impetus for this investigation. In order to illustrate the difference between school scores Table 1 was constructed. The state mean raw scores for comprehensive high schools, all vocational schools and full-time vocational schools were included along with the percentile rank for all vocational schools and full-time vocational schools. Percentile ranks were calculated for each of the fourteen goal areas based on Pennsylvania norms for comprehensive high school grade eleven students. Full-time vocational schools were the nine Pennsylvania schools that had students attending a vocational school for all subjects, i.e. they did not attend a comprehensive school for any instruction.

The mean raw scores, found in Table 1, for all vocational schools were lower than the comprehensive high school raw scores for thirteen of the fourteen goal areas. Only in the creative activities goal areas was the vocational school mean score higher than the comprehensive high school mean. That was of some interest since the creative activities assessment requires students to report the frequency with which they have performed a "creative activity" during the past three years. Creative activities is the only goal area that

does not deal with student knowledge or student attitudes but measures student activity. Also, the vocational school mean raw score was rather close to the comprehensive high school mean for the interest in school and learning goal area. This was logical since most vocational students in Pennsylvania have elected to attend the vocational school. An assumption was made that if a student elects to attend a vocational school then the student has some interest in the vocational school. A concern was noted on the remaining twelve goal area mean scores for all vocational schools. The fact that the percentile ranks were rather low (first to tenth percentile) in those twelve goal areas reflected the magnitude of the discrepancy between comprehensive and vocational school scores.

An examination of the full-time vocational school means revealed scores higher than those found for vocational schools overall. However, the full-time vocational school mean raw scores were lower than the comprehensive school means in thirteen of fourteen areas. Full-time vocational schools did score higher than the comprehensive schools in the interest in school and learning goal area. There was a clear trend for the full-time vocational schools to score higher than the vocational schools in general. The authors do not have sufficient data to explain the difference between Pennsylvania's part-time and full-time vocational schools. One could hypothesize that the selection process for full-time schools differs from part-time vocational schools, or that different students elect to attend those schools. Another hypothesis was that

Table 1

Mean School Raw Scores and Percentile Ranks
for Comprehensive, All Vocational and
Full-Time Vocational Schools on the Goal Areas

Goal Area	Mean School Raw Scores			Percentile Ranks[2]	
	Compre-hensive[1]	All Vocational	Full-Time Vocational	All Vocational	Full-Time Vocational
Self-Esteem	59.49	56.10	57.43	10	20
Understanding Others	111.63	99.96	104.70	1	5
Reading	24.60	19.27	21.25	5	10
Writing	34.32	28.15	29.58	1	5
Mathematics	34.36	29.42	31.51	5	15
Interest in School and Learning	65.56	64.20	67.38	40	65
Societal Responsibility	50.10	45.29	46.96	1	10
Knowledge of Law and Government	24.37	19.77	21.29	1	10
Health and Safety Practices	81.45	75.47	76.88	5	10
Creative Activities	41.09	41.22	39.72	50	35
Career Awareness	22.75	19.56	20.61	5	10
Appreciating Human Accomplishments	128.67	115.85	117.56	5	5
Knowledge of Human Accomplishments	26.03	19.47	20.67	1	1
Information Usage	17.58	13.55	15.00	5	10

N=195 for comprehensive, N=69 for all vocational, N=9 for full-time vocational

[1]Some comprehensive high schools included part-time vocational students when administering the instrument.

[2]Percentile rank was calculated based on comprehensive high school norms.

attending one school for all subjects (full-time) promotes higher scores and better attitudes on the fourteen areas measured than attending two schools part time. Also, students attending a school full time may be exposed to a better coordinated instructional and program package.

In summary, the vocational scores were much lower than those found in comprehensive high schools. An examination of the full-time vocational scores revealed slightly higher scores than those in the vocational schools overall. There was little doubt that the Behrens-Fisher t'test would find a significant difference between the vocational and comprehensive high school scores for most goal areas. Thus, the student data were analyzed in the following section to gain additional information on the discrepancy between scores.

Student Goal Scores

In an effort to examine the difference between comprehensive and vocational school student scores the following averages were calculated. A mean student score, for each of the fourteen goal areas, was calculated for each of four samples. First, the students attending comprehensive high schools in Pennsylvania were considered. This group did include some students attending a vocational school on a part time basis that were assessed while in a comprehensive high school. Second, student means were derived for non-vocational school students. This group consisted of students not attending part time or full time vocational schools. Third, the means were calculated for all vocational school students. Fourth, only full-time vocational students were considered. These data were placed in Table 2.

Overall, there was a strong tendency for the non-vocational students to have the highest scores. Non-vocational students had the highest scores in thirteen of the fourteen goal areas. In general, the comprehensive high school students were the second highest scoring group. Comprehensive high school students had the next to the highest score in thirteen of the fourteen goal areas. Full-time vocational school students did score higher than the non-vocational school students in interest in school and learning. The group of all vocational students scored the lowest of all groups considered.

Based on a review of the student data and school mean data there was a strong tendency for vocational scores to be lower than the comprehensive scores. This was observed for the student groups when segregating vocational and comprehensive school students in various ways as presented in Table 2. It seemed appropriate to conclude the analysis by calculating t'values and "effect size" to examine if a significant difference existed between groups and the magnitude of the difference between comprehensive and vocational scores. This analysis was presented in the following section.

Analysis of Goal Scores

Student data were analyzed for the fourteen goal areas using the Behrens-Fisher t'test and a measure of "effect size." Mean scores used in the analysis reflected the influence of matrix sampling. That is, the mean was calculated based on the number of items presented to individual students for each goal area. Results of the analysis were placed in Table 3.

Table 2

Student Raw Scores
for Comprehensive Non-Vocational Students, Vocational Students
and Full-Time Vocational Students on the Goal Areas

Goal Area	Mean Student Raw Score			
	Comprehensive	Non-Vocational	All Vocational	Full-Time Vocational
Self-Esteem	59.68	60.35	56.26	57.63
Understanding Others	111.55	113.88	99.49	104.16
Reading	24.70	25.77	19.29	21.69
Writing	34.57	35.81	28.26	30.42
Mathematics	34.76	35.83	29.47	31.80
Interest in School and Learning	66.03	66.48	64.14	66.61
Societal Responsibility	49.76	50.65	45.06	47.57
Knowledge of Law and Government	24.63	25.58	19.87	21.70
Health and Safety Practices	80.70	81.75	74.98	77.76
Creative Activities	42.18	42.38	41.77	39.24
Career Awareness	22.90	23.53	19.64	20.85
Appreciating Human Accomplishments	128.60	130.80	115.75	118.49
Knowledge of Human Accomplishments	26.60	27.67	19.65	21.06
Information Usage	17.61	18.37	13.53	15.18

N=Approximately 36,000 for comprehensive, N=approximately 30,000 for non-vocational, N=20,000 for all vocational, N=2,700 for full-time vocational.

A review of the t'test results, found in Table 3, indicated all t'values were statistically significant at or beyond the .01 level of probability. Thus, there was a statistically significant difference between the vocational student scores and the non-vocational student scores for all goal areas. These two groups were selected for the analysis because the groups are mutually exclusive. The vocational student scores included all vocational students (both part-time and full-time students). The non-vocational student group was selected because they represented the only group that had no vocational students. In every case the vocational student scores were lower than the non-vocational student scores. The effect size results indicated mainly moderate differences between the vocational and non-vocational scores for twelve of the goal areas. For interest in school and learning and creative activities the effect size value revealed only slight differences between the student scores.

Results of the statistical analysis and the consistency of results across goal areas indicated vocational school students were different from their non-vocational student counterparts. Vocational students were lower scoring on cognitive scales and were more negative on attitudinal scales. One way of investigating this discrepancy was to examine the conditions found in the types of schools.

School Conditions Analysis

It was considered a logical step to examine school conditions as a part of the investigation. If vocational school conditions were found to differ from those conditions in the comprehensive high schools, the hypothesis could be made that school conditions were related to school score differences. The

Table 3

Analysis of Vocational and Non-Vocational
Student Mean Goal Scores for 1982

AREA AND GROUP	MEAN	n	T'VALUE[1]	EFFECT SIZE VALUE
Self-Esteem Non-Vocational	15.08	30455		
Self-Esteem Vocational	14.06	20883	32.04	.29
Understanding Others Non-Vocational	28.45	30396		
Understanding Others Vocational	24.87	20883	49.69	.44
Reading Comprehension Non-Vocational	6.44	30509		
Reading Comprehension Vocational	4.82	20862	65.88	.58
Writing Skills Non-Vocational	8.95	30894		
Writing Skills Vocational	7.06	21058	71.17	.63
Mathematics Non-Vocational	8.95	30826		
Mathematics Vocational	7.37	21029	61.06	.54
Interest in School Non-Vocational	16.62	30734		
Interest in School Vocational	16.04	20876	13.38	.12
Societal Responsibility Non-Vocational	12.66	30532		
Societal Responsibility Vocational	11.26	20909	42.06	.38
Law and Government Non-Vocational	6.39	30130		
Law and Government Vocational	4.97	20654	62.63	.55
Health Non-Vocational	20.43	30414		
Health Vocational	18.74	20767	30.46	.27
Creative Activities Non-Vocational	10.60	29939		
Creative Activities Vocational	10.44	20302	2.42	.02
Career Awareness Non-Vocational	5.88	30708		
Career Awareness Vocational	4.91	21020	51.03	.45
Apprec. Accomplishments Non-Vocational	32.70	30481		
Apprec. Accomplishments Vocational	28.93	20898	36.63	.33
Knowledge of Accomp. Non-Vocational	6.92	24861		
Knowledge of Accomp. Vocational	4.91	14332	68.63	.70
Information Usage Non-Vocational	4.59	30635		
Information Usage Vocational	3.38	20963	68.47	.60

[1] All t'values were statistically significant at or beyond the .01 level of probability.

school conditions were examined by calculating a mean for the non-vocational students and for all vocational students. Those groups were selected, as noted before, because they represented mutually exclusive groups, i.e., all vocational students and students not attending vocational schools. After student means were calculated, the Behrens-Fisher t'test was employed to statistically investigate the difference between mean scores. Also, effect size was calculated to estimate the magnitude of the difference between the student scores for the vocational and non-vocational groups. A summary of this analysis was presented in Table 4.

Results of the t'tests indicated there was a statistically significant difference between the vocational student and non-vocational student scores on all twenty-one condition variables. This finding supported the notion that students selecting to attend vocational schools were quite different from those remaining in non-vocational school programs based on an analysis of student data.

Specifically, some of the findings were: that vocational student socio-economic status was significantly lower than non-vocational student socio-economic status. A total of four variables were used as indicators of socio-economic status which were father's occupation, mother's occupation, father's education, and mother's education. For all four school condition variables on socio-economic status the vocational student scores were significantly lower. In addition vocational student occupational desires and occupational expectations were significantly lower than the non-vocational students.

Table 4

Analysis of Vocational and Non-Vocational
Student Scores on School Condition
Variables for 1982

AREA AND GROUP	MEAN	n	T'VALUE[1]	EFFECT SIZE VALUE
Father's Occupation Non-Vocational	57.68	28888		
Father's Occupation Vocational	48.40	19442	34.10	.31
Mother's Occupation Non-Vocational	30.49	28660		
Mother's Occupation Vocational	25.32	19259	18.75	.17
Occupational Desire Non-Vocational	71.21	28314		
Occupational Deisre Vocational	58.48	19125	60.80	.57
Occupational Expectations Non-Vocational	67.10	27445		
Occupational Expectations Vocational	54.58	18617	54.68	.51
Sex (Male or Female) Non-Vocational	0.52	30930		
Sex (Male or Female) Vocational	0.34	21061	40.67	.36
Father's Education Non-Vocational	3.55	30538		
Father's Education Vocational	2.95	20677	49.15	.42
Mother's Education Non-Vocational	3.33	30671		
Mother's Education Vocational	2.97	20774	35.43	.31
Community Size Non-Vocational	2.40	30724		
Community Size Vocational	2.17	20894	12.42	.11
Race Non-Vocational	1.03	30629		
Race Vocational	1.02	20877	3.75	.03
Library Accessibility Non-Vocational	1.97	30922		
Library Accessibility Vocational	1.40	21013	54.71	.50
Residence Stability Non-Vocational	3.79	30890		
Residence Stability Vocational	3.71	20989	12.17	.11
Number of Siblings Non-Vocational	2.73	30764		
Number of Siblings Vocational	3.00	20865	-15.41	.14
Family Order Non-Vocational	1.05	30846		
Family Order Vocational	0.97	20957	11.38	.10
Parental Interest Non-Vocational	5.46	30709		
Parental Interest Vocational	4.92	20901	27.88	.25
Homework Time Non-Vocational	1.85	30893		
Homework Time Vocational	1.24	21019	62.53	.55

Table 4 (Cont'd)

Analysis of Vocational and Non-Vocational
Student Scores on School Condition
Variables for 1982

AREA AND GROUP	MEAN	n	T'VALUE[1]	EFFECT SIZE VALUE
Television Time Non-Vocational	1.46	30880		
Television Time Vocational	1.55	20990	-6.83	.06
Parental Expectations Non-Vocational	5.16	28715		
Parental Expectations Vocational	4.09	18864	81.69	.74
Educational Expectations Non-Vocational	2.40	30859		
Educational Expectations Vocational	1.63	20987	93.73	.81
Teacher Expectations Non-Vocational	1.75	24198		
Teacher Expectations Vocational	1.56	15703	24.67	.25
Home Reading Materials Non-Vocational	11.61	30876		
Home Reading Materials Vocational	10.93	21006	28.04	.25
Home Climate Non-Vocational	5.93	30389		
Home Climate Vocational	5.62	20557	17.67	.16

[1]All t'values were statistically significant at or beyond the .01 level of probability.

The percentage of girls in the vocational student group was 34 percent while the non-vocational group had 52 percent girls. This was a significant difference, and some research has indicated girls do score higher than boys at eleventh grade (Guerriero, 1981). Thus, based on the research, vocational school and student mean scores should be lower due to the high percentage of boys attending vocational schools.

Community size results indicated non-vocational students were from areas of greater population density. There was considerable doubt by the authors that this finding was of any importance. Also, the racial composition of the two groups differed only slightly.

The non-vocational students did report greater accessibility to the library than the vocational students. Accessibility to the library could contribute to higher scores in cognitive goal areas on the part of non-vocational students. However, other factors may influence this relationship including the time provided and the need for vocational students to use the library. Correlation coefficients were presented in a separate section of the paper to illustrate the positive statistical relationship between student scores and library accessibility.

Both vocational and non-vocational student means reflected considerable stability in the student residence. The non-vocational students did indicate they had greater residence stability in that fewer schools were attended within the past three years.

The number of siblings and family order analysis indicated vocational students had a larger number of siblings and more older siblings. Based on the effect size values, the difference between vocational and non-vocational students was not large for the family size and family order variables.

A review of the student perceptions of parental interest in school scores indicated non-vocational students perceived their parents as being more interested in the school and supportive of the school. This difference between vocational and non-vocational students could be of some importance. Correlation coefficients between student achievement and student perception of parental interest in school have been found to be high and positive. The correlations are placed in Tables 5, 6, 7 and 8.

Table 4 includes data on the amount of time students spend doing homework and watching television. Non-vocational students reported watching less television and spending more time on homework. Both of these student characteristics could promote higher student achievement by non-vocational students. It was noted that the magnitude of difference between mean scores was rather small for television watching time.

Student perceptions on three different conditions were collected. They were the following: student perception of parental expectations, student educational expectations and student perception of teacher expectations. For each variable, the non-vocational students had higher expectations than the vocational students. It is possible that higher expectations were related to the students decision to not attend a vocational school. Hence, a student

selecting to go to a vocational school had, in general, lower expectations. A question not answered was if lower expectations were related to lower scores in cognitive goal areas and less positive attitudes in attitudinal goal areas.

The remaining two school conditions were the amount of home reading materials and home climate. Non-vocational students had significantly more reading materials in the home and a more positive home climate.

Overall, the non-vocational students had an advantage in each of the twenty-one school condition variables. When the school scores were examined, the same pattern of higher scores was found in the comprehensive schools. The next task was to examine the statistical relationship between the goal scores and the school conditions.

Correlations Between Goals and Conditions

In an attempt to investigate the statistical relationship between goal area scores and condition variable scores, Pearson Correlation Coefficients were calculated for vocational students and non-vocational students. Pearson Correlation Coefficients were also calculated using school data between goal area scores and condition variable scores for vocational schools and non-vocational schools.

Student Data

In order to decode the acronyms used in Table 5 see appendices A and B. Only correlations greater than .10 were included in the table because of the small amount of variance explained. All correlations presented in the table were statistically significant at or beyond the .01 level of probability.

The following guidelines were used in developing Tables 5, 6, 7, and 8. Table 5 presents the correlations between student condition variables and student goal scores for non-vocational students. Student correlations were positive and rather high between several condition variables and goal area scores. For example, non-vocational student occupational desires (OCDESIRE) had the following correlations: .26 with reading comprehension (RC), .28 with writing skills (W), .32 with mathematics (M), .31 with knowledge of law and government (KL), .25 with career awareness (CA), .28 with knowledge of human accomplishments (KH) and .25 with information usage (IU). It was observed that the correlations indicated students with high occupational desires had higher scores on cognitive goal areas. Correlations between cognitive areas and parental education (PAREDUC), parental occupation (PAROCC) and student occupational expectations (OCEXPECT) were somewhat similar to correlations previously noted with student occupational desires.

Correlations, from Table 5, were negative for two variables, family size (FAMSIZE) and television watching time (TVWATCH), with several goal areas. The negative correlations revealed students from larger families had a tendency to score lower on cognitive goal areas. Higher television watching time was statistically linked to both lower cognitive and negative affective goal scores.

Table 5
Correlation Coefficients Between
Student Condition Variable Scores And Student Goal Scores
Grade 11 Students Not Attending Vocational Schools

	SE	UO	RC	W	M	IS	SR	KL	HP	C	CA	AH	KH	IU
17. PAREDUC	.13	.11	.19	.20	.23			.22		.15	.19	.12	.23	.17
18. PAROCC	.11		.16	.18	.20			.18		.11	.16		.20	.14
19. OCDESIRE	.22	.13	.26	.28	.32	.19	.10	.31	.10	.10	.25	.20	.28	.25
20. OCEXPECT	.24	.13	.26	.26	.32	.22	.10	.31	.11	.13	.24	.20	.29	.24
21. SEX	.14	.19		.19			.30					.12		.16
24. LIBRARY	.13	.10	.11	.12	.11	.19	.12							.11
25. STABLE		.10	.12	.16	.16		.10	.13			.13		.12	.13
26. FAMSIZE			-.13	-.15	-.15			-.14			-.16		-.16	-.12
27. FAMORDER				.10	.10			.11			.11		.12	
28. SPARINT	.36	.22	.25	.28	.24	.50	.28	.24	.23		.20	.25	.22	.25
29. HOMEWORK	.23	.19	.18	.23	.15	.37	.33	.15	.31		.12	.31	.17	.21
30. TVWATCH	-.11	-.11	-.14	-.16	-.18			-.14		-.11	-.13	-.11	-.11	-.13
31. PAREXP	.34	.21	.37	.38	.43	.28	.17	.41	.17	.19	.33	.30	.40	.33
32. EDEXPECT	.33	.23	.35	.37	.40	.32	.21	.39	.20	.19	.32	.33	.39	.33
33. STEACHEX	.30	.16	.30	.29	.32	.23	.15	.31	.15	.15	.23	.21	.29	.26
34. HOMEREAD	.19	.17	.22	.25	.24	.17	.15	.23	.10	.13	.22	.15	.24	.21
35. HOMECLIM	.28	.12		.11		.29	.19	.10	.19		.12	.13	.10	

n = approximately 31,000
All correlation coefficients have been rounded to the hundredth, and all coefficients are significant at or beyond the .01 level of probability. Only $r \geq .10$ are printed.

Several other condition variables were noted because of their high correlations with goal areas. Student perception of parental interest in school (SPARINT) was found to have some of the highest correlations with affective goal areas plus significant correlations with cognitive goal areas. Time spent on homework (HOMEWORK) and the amount of home reading materials (HOMEREAD) were found to have a positive statistical relationship with affective and cognitive goal areas. Some of the other condition variables with significant relationships with goal areas were: student perceptions of parental expectations (PAREXP), student educational expectations (EDEXPECT) and student perception of teacher expectations (STEACHEX).

The reader should note the Pearson Correlations only revealed the statistical relationship between student condition variables and goal scores. Hence, a causal relationship was not inferred in the presentation of these data.

Table 6 presents the correlations between student condition variables and student goal scores for vocational students. Again, to decode the acronyms used in Table 6 see Appendices A and B.

The vocational student correlations were lower for most condition variables from those correlations for non-vocational students. For example, parental education (PAREDUC) and parental occupation (PAROCC) correlations were less than .10 with all goal scores. Hence, for the socio-economic variables there was an extremely weak statistical relationship with vocational student goal scores. Also, the magnitude of the correlations between goal areas and vocational student occupational desires (OCDESIRE) and occupational expectation (OCEXPECT) was smaller than for non-vocational students.

Table 6
Correlation Coefficients Between
Student Condition Variable Scores And Student Goal Scores
Grade 11 Vocational Technical Students

	SE	UO	RC	W	M	IS	SR	KL	HP	C	CA	AH	KH	IU
17. PAREDUC														
18. PAROCC														
19. OCDESIRE	.11		.13	.14	.16			.15			.14	.12	.16	.12
20. OCEXPECT	.11				.13			.13			.10	.11	.14	
21. SEX		.21	.11	.22			.28							.18
24. LIBRARY	.12		.10	.11		.19	.14		.10					
25. STABLE			.11	.15	.14			.11			.12		.11	.11
26. FAMSIZE													-.11	
27. FAMORDER														
28. SPARINT	.28	.15	.14	.16	.12	.46	.23	.12	.19		.11	.20	.11	.12
29. HOMEWORK	.14	.12		.10		.31	.28		.25			.25		
30. TVWATCH														
31. PAREXP	.24	.12	.17	.18	.19	.21	.13	.19	.15	.10	.15	.21	.19	.14
32. EDEXPECT	.19	.13	.14	.15	.14	.20	.14	.15	.14		.14	.22	.18	.13
33. STEACHEX	.18		.13	.12	.14	.17		.14	.10		.10	.13	.13	.10
34. HOMEREAD	.14		.11	.15	.15	.14		.13			.14		.15	.10
35. HOMECLIM	.22					.27	.15		.16			.11		

n = approximately 21,000
Note: All correlation coefficients have been rounded to hundredths, and all coefficients are significant at or beyond the .01 level of probability. Only $r \geq .10$ are printed.

Some of the highest correlations between goal scores and vocational student conditions were found for the following: Student perception of parental interest in school (SPARINT), amount of time on homework (HOMEWORK), student perception of parental expectations (PAREXP), student educational expectations (EDEXPECT) and student perception of teacher expectations (STEACHEX). Although these were some of the higher correlations, the amount of variance explained was rather small.

School Data

Correlation coefficients were calculated using school data, rather than student data, between school condition variable scores and school goal area scores for grade eleven. Table 7 presents the comprehensive high school correlations while Table 8 presents the vocational school correlations. It was anticipated that EQA building level correlations would be greater than student level correlations. This expectation is based on the fact that when aggregated data such as a building mean score is the unit of analysis, a larger magnitude in the correlation coefficient is generally observed (Robinson, 1950).

A review of the comprehensive high school data found in Table 7 revealed several strong statistical relationships between mean school conditions and school goal scores. A few of the school conditions with higher correlations were the following: percentage of low income students (PCTTILI), all teacher perceptions of school conditions (TSATPAR, EXTRACT, TRELATE, DISRUPT, INFLUENCE, TSTAFF and DISCPROB), parental education (PAREDUC), parental occupation (PAROCC),

Table 7
Correlation Coefficients Between
School Condition Variable Scores and School Scores
Grade 11, 1982 Comprehensive High Schools

	SE	UO	RC	W	M	IS	SR	KL	HP	C	CA	AH	KH	IU
1. GRENROLL						.14	-.24		-.24	.39			.23	
2. PCTTILI		-.26	-.37	-.50	-.54			-.43	.31	-.34	-.55	.14	-.53	-.40
3. TUITION	.38					.29	-.22			.44		.31		-.15
4. TLOCALE		-.24	-.36	-.28	-.30		-.25	-.19	-.19		-.28			-.31
5. TSATPAR		.24	.41	.46	.54	.24	.14	.42		.16	.46		.41	.41
6. TEDUC	.26			.17	.14	.20	-.25	.20	-.17	.43	.20		.33	
7. TEXPER							-.17		-.14	.18			.21	
8. CLSIZE	-.14								-.14					
11. EXTRACT	.15	.14	.17	.27	.28	.35	.14	.20		.17	.20		.21	.22
12. TRELATE	.20	.27	.43	.52	.58	.29	.14	.47		.25	.53		.54	.47
13. DISRUPT		.23	.33	.36	.40	.14	.25	.27			.34		.26	.42
14. INFLUENC	.17	.25	.26	.26	.27	.30	.25	.22			.22		.22	.33
15. TSTAFF	.20	.14	.21	.26	.25	.30	.24	.18	.20		.22	.14	.19	.26
16. DISCPROB		.26	.40	.43	.49	.28	.24	.33			.41		.36	.45
17. PAREDUC	.16	.23	.39	.55	.54		-.15	.50	-.28	.54	.55		.67	.36
18. PAROCC	.17	.22	.40	.55	.54		-.17	.48	-.30	.55	.57		.64	.37
19. OCDESIRE	.37	.20	.27	.40	.32	.25		.40		.51	.39	.28	.54	.24
20. OCEXPECT	.31	.16	.23	.37	.33	.25	-.17	.40	-.19	.52	.34	.20	.55	.20
21. PCTGIRLS					-.22		.20	-.19	.17		-.17	.28		
22. RESIDE	.40	-.19	-.20		-.16	.26	-.28			.32		.19		-.21
23. PCTWHITE	-.35	.24	.35	.37	.43	-.28	.14	.32	-.30	-.21	.40	-.37	.25	.39
24. LIBRARY		.25	.29	.25	.28	.21	.28	.17			.28			.35
25. STABLE	.20	.26	.27	.21	.19		.35	.23	.15	-.32	.23			.29
26. FAMSIZE		-.24	-.41	-.50	-.55			-.47	.30	-.16	-.54	.16	-.47	-.44
27. FAMORDER		.23	.32	.36	.45			.33	-.19		.39		.32	.33
28. SPARINT	.54	.42	.52	.50	.50	.72	.34	.45	.23	.18	.41	.37	.41	.50
29. HOMEWORK	.33	.26	.23	.31	.21	.36	.25	.25	.40	.25	.20	.48	.23	.23
30. TVWATCH		-.30	-.46	-.56	-.58			-.47	.25	-.28	-.55		-.48	-.44
31. PAREXP	.43	.20	.26	.36	.31	.30		.39		.47	.35	.33	.52	.22
32. EDEXPECT	.39	.26	.31	.45	.37	.27		.43		.48	.40	.30	.58	.28
33. STEACHEX	.48					.39			.14	.33		.31	.15	
34. HOMEREAD	.15	.41	.51	.62	.55			.52		.31	.59		.58	.48
35. HOMECLIM	.52	.21	.27	.18		.50	.35	.16	.40		.15	.38		.22

n=195

Note: All correlation coefficients have been rounded to two decimal places.
Only $r \geq .14$ are printed because: $r \geq .14$ is significant at the .05 level. $r \geq .18$ is significant at the .01 level.

student occupational desires (OCDESIRE), student occupational expectations (OCEXPECT), family size or number of siblings (FAMSIZE), student perception of parental interest in school (SPARINT) and amount of home reading material (HOMEREAD) along with others. Also, the amount of variance explained was rather high for many of the school condition variables.

Vocational school data were used to construct Table 8 which presented the correlations between school condition variables and school goal area scores. The magnitude of the correlations was much smaller for the vocational school data. Several major differences were noted when Tables 7 and 8 were compared. For example, all of the teacher perceptions of school conditions (TSATPAR, EXTRACT, TRELATE, DISRUPT, INFLUENCE, TSTAFF and DISCPROB) correlations were not statistically significant for vocational schools. Also, the socio-economic indicators parental education (PAREDUC) and parental occupation (PAROCC) correlations were much lower for vocational schools.

Although the vocational school correlations were lower than those of the comprehensive high schools, there were several condition variables that had substantial correlations with goal areas. Overall, student perception of parental interest in school (SPARINT) had some of the higher correlations with goal areas including: .70 with self-esteem (SE), .42 with understanding others (UO), .51 with reading comprehension (RC), .47 with writing skills (W), .46 with mathematics (M), .77 with interest in school and learning (IS), .43 with societal responsibility (SR), .44 with knowledge of law and government (KL), .43 with career awareness (CA), .27 with appreciating human accomplishments (AH), .48 with knowledge of human accomplishments (KH) and .43 with information usage. Several other vocational school condition variables, from Table 8, had

Table 8
Correlation Coefficients Between
School Condition Variable Scores and School Scores
Grade 11, 1982 Vocational Schools

	SE	UO	RC	W	M	IS	SR	KL	HP	C	CA	AH	KH	IU
1. GRENROLL									-.27					
4. TLOCALE														
5. TSATPAR														
6. TEDUC					-.27									
7. TEXPER														
8. CLSIZE														
11. EXTRACT														
12. TRELATE														
13. DISRUPT														
14. INFLUENC														
15. TSTAFF														
16. DISCPROB														
17. PAREDUC		-.27				-.24	-.49		-.43	.36				
18. PAROCC							-.42		-.52	.33				
19. OCDESIRE	.42					.23				.29			.34	
20. OCEXPECT	.33						-.24		-.30	.37			.23	
21. PCTGIRLS	.29	.43	.27	.39			.43	.30	.25		.35	.28	.34	.37
22. RESIDE		-.28	-.32		-.28		-.40		.42	.46				.24
23. PCTWHITE		.40	.43	.34	.39		.43	.39	.29	-.49	.26			.35
24. LIBRARY		.48	.41	.34	.47		.38	.42		-.33	.33		.24	.42
25. STABLE		.36	.36	.35	.32		.44	.32	.36	-.43	.24		.23	.27
26. FAMSIZE			-.25	-.29	-.34			-.27			-.32		-.30	
27. FAMORDER			.24		.33			.23		-.24	.29			
28. SPARINT	.70	.42	.51	.47	.46	.77	.43	.44			.43	.27	.48	.43
29. HOMEWORK	.34	.33	.41	.46	.35	.34	.58	.44	.48		.28	.38	.26	.42
30. TVWATCH	-.24		-.32	-.50	-.38			-.30	.31		-.52		-.47	-.41
31. PAREXP	.48					.23				.32		.30	.25	
32. EDEXPECT	.38									.34		.24	.28	
33. STEACHEX	.42					.47								
34. HOMEREAD	.27	.35	.42	.52	.49		.25	.43			.45		.45	
35. HOMECLIM	.53	.49	.48	.27	.36	.42	.50	.38	.36	-.32	.33		.36	.39

n=69

Note: All correlation coefficients have been rounded to two decimal places.
Only $r \geq .23$ are printed because: $r \geq .23$ is significant at the .05 level. $r \geq .30$ is significant at the .01 level.

high correlations with goal areas. Some of those condition variables were: percentage of girls (PCTGIRLS), percentage of white students (PCTWHITE), accessibility to the library (LIBRARY), stability of student residence (STABLE), time spent on homework (HOMEWORK), time spent watching television (TVWATCH), amount of home reading materials (HOMEREAD) and home climate (HOMECLIM).

The correlation coefficients from Tables 5, 6, 7 and 8 revealed (1) the statistical relationship between school conditions and goal scores for vocational schools was different from that for comprehensive high schools, (2) the school correlations were much higher than the student correlations and (3) the statistical relationship for vocational students was different from that for the non-vocational students. It was of interest to the authors that socio-economic status (parent education and parental occupation) was not statistically related to cognitive goal scores for vocational students and for vocational schools. Another difference noted was that the teacher perception of school conditions as having high correlations with goal areas for comprehensive high schools but having low correlations for vocational schools.

Based on the differences noted it seems that vocational schools and vocational students have unique characteristics. The statistical relationship between goal scores and condition variables is for many variables unique to the vocational setting. One conclusion that could be derived is that vocational scores should be different from the non-vocational scores. This considers the fact that condition variables scores and the goal with condition variable statistical relationships are rather different for each group.

Replicating the Vocational Student Sample

A sample of non-vocational students was randomly selected that replicated the distribution of vocational students on a socio-economic variable. Specifically, the distribution of vocational students on parental occupation was employed. The percentage of vocational students in the parental occupation levels was the following: level 1-20 (lowest), 13 percent; level 21-40, 11 percent; level 41-60, 30 percent; level 61-80, 28 percent; and level 81-100 (highest), 16 percent. Those values were plotted on Graph 1. Using those percentages a sample of non-vocational students was selected that contained 13 percent of the students with parental occupation levels of 1 to 20, 11 percent wich parental occupation levels of 21 to 40 and continuing with the same pattern for the remaining occupation levels.

Once the sample was selected, mean student scores were calculated on each of the fourteen goal areas for vocational and non-vocational students. The vocational student mean scores found in Table 9 represented the Pennsylvania vocational students. The non-vocational student mean scores represented the sample of non-vocational students with a socio-economic status distribution similar to that of the vocational school students as previously described.

A review of Table 9 indicated the vocational students were lower scoring in all of the cognitive and most affective areas than the sample of non-vocational students. For example, in mathematics the overall mean score for vocational students was 7.44 while the non-vocational sample mean score was 8.86. An examination of the mean scores by parental occupation level revealed the non-vocational sample scored higher in each socio-economic category than the vocational students. Also, of interest was the fact that the non-vocational

scores increased in mathematics as the socio-economic level increased. This was not the case with vocational student scores across socio-economic levels. Vocational students scores varied only slightly as the socio-economic level increased (this was also found in the correlations presented in Table 6).

There was only one goal area, creative activities, in which vocational students overall scored higher than non-vocational students. The lower and middle socio-economic vocational student scores were higher than the non-vocational scores. The higher socio-economic vocational scores on creative activities were lower than the non-vocational scores. However, the higher socio-economic vocational scores were higher than lower and middle socio-economic vocational student scores.

For the interest in school and learning goal area, a unique pattern was displayed. Although the non-vocational student sample scored slightly higher overall than the vocational group, the lowest occupational level vocational group scored higher than the non-vocational group. For non-vocational students, the higher socio-economic levels scored higher than the lower socio-economic levels. However, for vocational students the trend was reversed with interest in school and learning declining as socio-economic levels rose. The authors see this as noteworthy indicating a positive value of the vocational school for the lower socio-economic levels.

Overall, a pattern of low cognitive scores and more negative attitudes was found in the higher socio-economic vocational students. The greatest differences between vocational and non-vocational student scores was found in the higher socio-economic groups. This could be in part due to the type of high socio-economic student that selects the vocational school program. It should be

Table 9

Student Mean Goal Area Scores by Socio-economic Level for Vocational Students and a Sample of Non-vocational Students Replicating the Vocational Sample

Goal Area		Mean Student Scores by Levels 1-20 (Lowest)	21-40	41-60	61-80	81-100 (Highest)	Total Mean
Self-Esteem	NV[1]	14.63	14.52	14.72	15.19	15.61	14.97
	V[2]	14.08	14.11	14.00	14.20	14.18	14.11
Understanding Others	NV	27.80	27.60	27.81	28.68	29.86	28.37
	V	25.25	25.26	24.96	24.95	24.79	24.98
Reading Comprehension	NV	5.90	5.97	6.01	6.56	7.30	6.36
	V	4.85	4.83	4.83	4.96	4.84	4.87
Writing Skills	NV	8.25	8.38	8.49	9.13	9.88	8.86
	V	7.09	7.07	7.12	7.21	7.10	7.13
Mathematics	NV	8.15	8.43	8.49	9.10	10.00	8.86
	V	7.35	7.37	7.38	7.59	7.42	7.44
Interest in School and Learning	NV	16.33	16.28	16.22	16.71	17.39	16.58
	V	16.35	16.20	16.08	16.06	15.79	16.07
Societal Responsibility	NV	12.62	12.61	12.49	12.76	12.99	12.68
	V	11.71	11.47	11.32	11.24	11.03	10.31
Knowledge of Law and Government	NV	5.84	5.90	5.97	6.46	7.19	6.29
	V	4.92	4.97	4.94	5.12	5.04	5.01
Health and Safety Practices	NV	20.44	20.42	20.33	20.58	20.63	20.48
	V	19.40	18.93	18.86	18.68	18.24	18.77
Creative Activities	NV	9.52	9.50	10.07	10.55	11.43	10.30
	V	9.98	9.93	10.08	10.36	11.26	10.34
Career Awareness	NV	5.42	5.51	5.60	6.02	6.47	5.83
	V	4.87	4.85	4.91	5.01	5.06	4.95
Appreciating Human Accomplishments	NV	31.93	31.34	31.59	32.68	34.73	32.44
	V	29.70	28.66	28.60	28.79	29.25	28.92

[1]NV is the non-vocational student sample scores
[2]V is the vocational student scores

Table 9 (Continued)

Student Mean Goal Area Scores by Socio-economic Level for Vocational Students and a Sample of Non-vocational Students Replicating the Vocational Sample

Goal Area		Mean Student Scores by Levels					Total Mean
		1-20 (Lowest)	21-40	41-60	61-80	81-100 (Highest)	
Knowledge of Human Accomplishments	NV[1]	6.16	6.13	6.39	7.03	7.77	6.78
	V[2]	4.88	4.78	4.81	5.11	5.15	4.97
Information Usage	NV	4.27	4.30	4.33	4.67	5.14	4.55
	V	3.40	3.41	3.40	3.44	3.41	3.42

[1]NV is the non-vocational student sample scores
[2]V is the vocational student scores

N = 19,549 non-vocational students and 19,525 vocational students

noted the middle and lower socio-economic vocational students had scores lower than the non-vocational students.

Ancillary Findings

Socio-Economic Status

An analysis of socio-economic variables revealed that there was not a significant relationship between vocational socio-economic status and goal area scores. In order to examine this finding the vocational and non-vocational student data were reorganized into socio-economic quartiles. The first quartile represented the lowest parental occupation levels while the fourth quartile represented the highest parental occupation levels. These data were placed in Table 10.

A review of the goal scores for each of the non-vocational socio-economic quartiles revealed students scored highest in the fourth quartile (highest parental occupational levels) and that students scored lowest in the first quartile (lowest parental occupational levels). This pattern for non-vocational students was continued for the affective goal area scores with the most positive students found at the highest socio-economic level and the most negative attitudes found at the lowest socio-economic level. The one exception noted for this pattern was for the student scores on health and safety practices. For that area the third quartile (next to the highest parental occupational level) had the highest scores. Drug usage and other poor health habits related to the pressures of their socio-economic background could be an explanation for the higher socio-economic student scores being lower.

The vocational student mean scores in Table 10 were lower than the non-vocational student scores. Also, the mean vocational scores by quartiles were in a pattern different from the non-vocational scores. The highest scores for cognitive goal areas were found in the third quartile (next to the highest parental occupation level). For attitudinal goal areas the highest scores were in the first quartile group for four goal areas. In general, the means for the first quartile varied little from the other highest socio-economic groups. It appears socio-economic status had little relation to goal scores for vocational school students.

Since socio-economic status had little statistical relationship to vocational goal scores, the distribution of parental occupational and educational levels was graphed. Parental occupational levels found in Graph 1 indicated large differences between vocational and non-vocational students. A higher percentage of vocational student parental occupations are found in the lower and middle levels. The percentage of non-vocational student parental occupations at the highest level was 34 percent while 18 percent of the vocational students had parental occupations at the highest levels.

Graph 2 was developed to present parental educational levels for vocational and non-vocational students. A higher percentage of the vocational students had lower and middle education levels. The non-vocational students had higher percentages of students with high parental educational levels. The presentations in Graphs 1 and 2 revealed similar information on the distribution of students socio-economic status in the case of vocational and non-vocational students.

Table 10
Mean Goal Scores for Socio-Economic Groups for Vocational and Non-Vocational Students

	Non-Vocational Means by Quartiles					Vocational Means by Quartiles				
	Group Mean	4th	3rd	2nd	1st	Group Mean	4th	3rd	2nd	1st
Self-Esteem	15.08	15.60	15.36	14.94	14.59	14.06	14.13	14.24	14.06	14.07
Understanding Others	28.46	29.47	29.14	28.20	27.64	24.87	24.66	25.08	24.84	25.19
Reading Comprehension	6.44	7.13	6.77	6.25	5.93	4.82	4.83	4.92	4.88	4.85
Writing Skills	8.95	9.71	9.36	8 74	8.36	7.06	7.07	7.22	7.12	7.12
Mathematics	8.95	9.81	9.28	8.73	8.33	7.37	7.39	7.57	7.45	7.37
Interest in School	16.62	17.13	16.84	16.26	16.26	16.04	15.70	15.94	16.15	16.23
Societal Responsibility	12.66	12.85	12.84	12.60	12.58	11.26	10.97	11.21	11.28	11.53
Knowledge of Law/ Government	6.39	7.10	6.68	6.15	5.89	4.97	5.02	5.14	4.99	4.94
Health and Safety Practices	20.43	20.56	20.63	20.39	20.45	18.74	18.22	18.49	18.87	19.08
Creative Activities	10.60	11.69	10.74	10.31	9.53	10.44	11.35	10.47	10.25	9.96
Career Awareness	5.88	6.35	6.13	5.77	5.50	4.91	5.03	5.08	4.93	4.86
Appreciating Human Accomplishments	32.70	34.28	33.11	31.99	31.59	28.93	29.22	28.77	28.84	28.95
Knowledge of Human Accomplishments	6.92	7.69	7.25	6.69	6.15	4.91	5.13	5.18	4.92	4.81
Information Usage	4.59	5.03	4.79	4.46	4.31	3.38	3.40	3.46	3.40	3.41

non-vocational n=approximately 7,400 for fourth quartile, 7,300 for third quartile, 7,000 for second quartile, 7,100 for first quartile

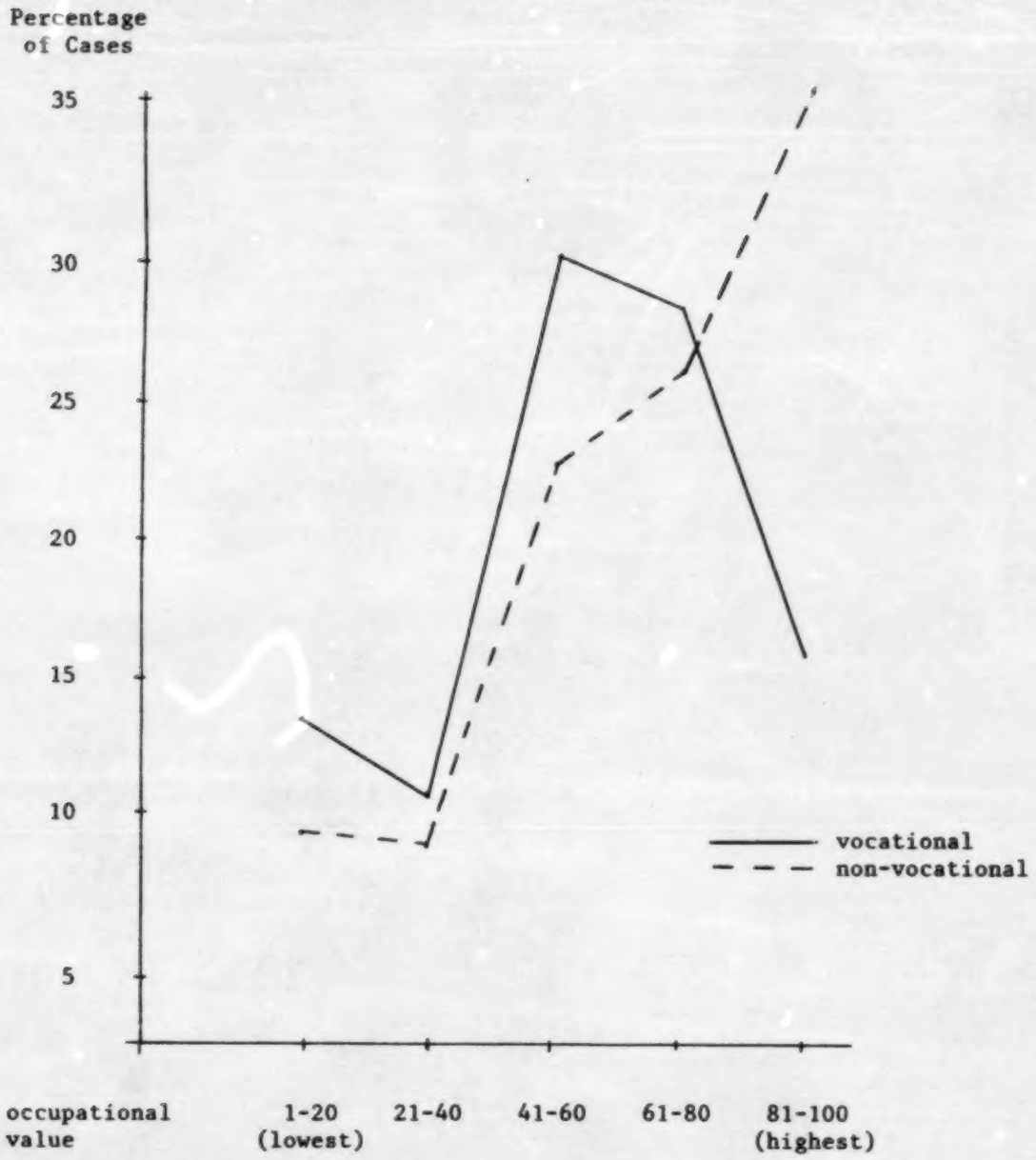
vocational n=approximately 2,600 for fourth quartile, 4,100 for third quartile, 6,000 for second quartile, 6,700 for first quartile

Based on Graphs 1 and 2 along with data previously presented it appeared the vocational student socio-economic status was different from the non-vocational students. Vocational students more often were from lower and middle socio-economic groups, but some students were from higher socio-economic groups. For those vocational students with higher socio-economic status, their scores were similar to other vocational student socio-economic groups. This finding was unexpected because of socio-economic status data collected for non-vocational students was much different. The authors were curious if the higher socio-economic status vocational students were a select group of low scoring students. Was the fact that they were deviant in their cognitive scores and attitudes related in some way to the students selecting to attend a vocational school?

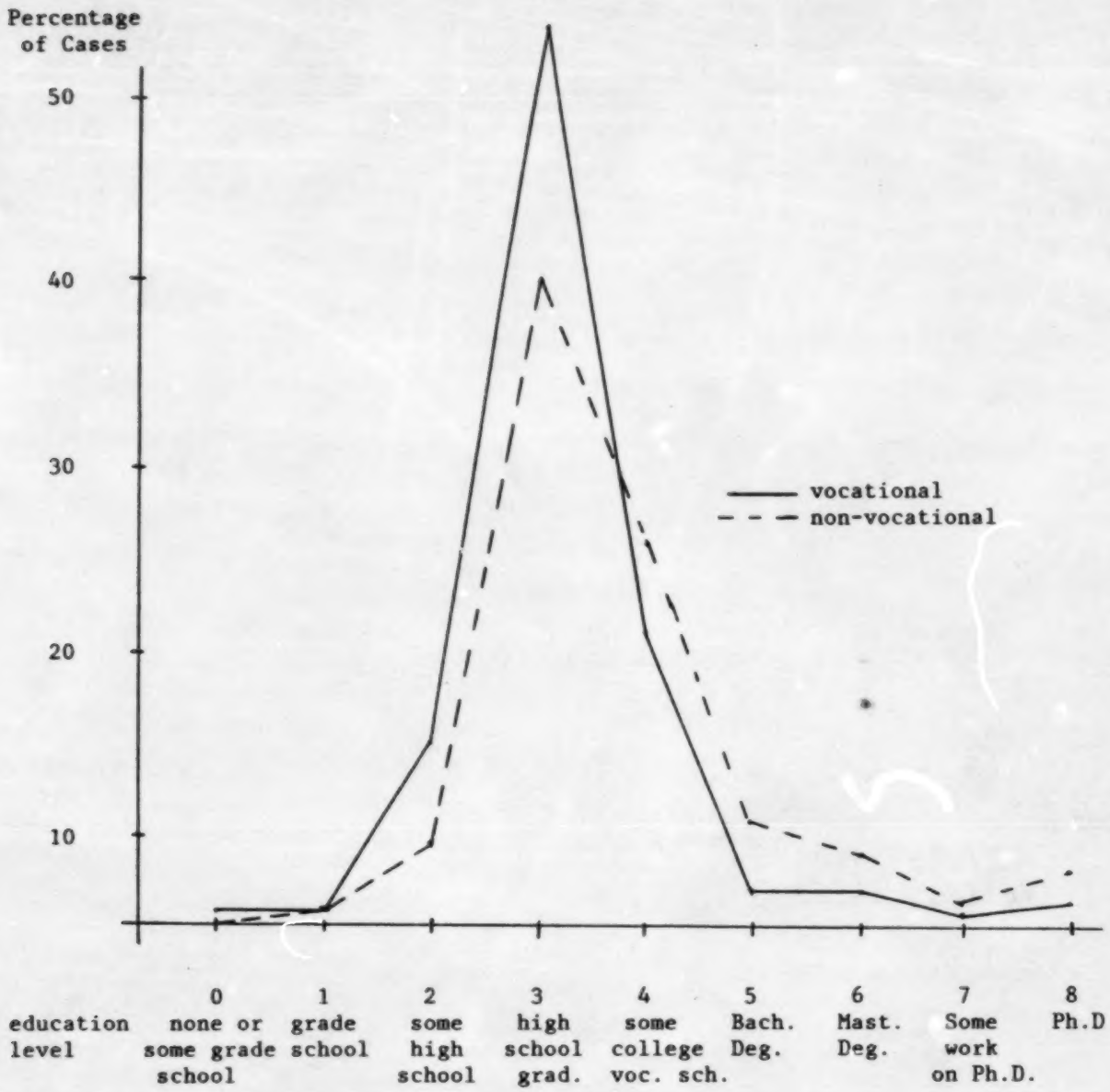
In addition, the high socio-economic students with pressures from home, school and peers probably rejects vocational school as an alternative. The basis for the rejection includes notions such as: "Vocational school is for carpenters, mechanics, and beauticians," or, even worst, "Vocational school is for the slow students." The rejection also comes from the notion that you cannot go to college if you go to vocational school. Informal conversations with vocational and comprehensive high school principals revealed some information on this topic. Comprehensive school administrators did attempt in some schools to send the students with the lowest achievement levels to vocational schools.

Considering the expanded analysis of socio-economic data it appears socio-economic status differences may have contributed to lower vocational scores. It was noted that vocational schools did have some students of higher socio-economic status but not as many as found among the non-vocational students.

Graph 1
Distribution of Parental Occupational
Levels in Percentages for Vocational
and Non-Vocational Students



Graph 2
Distribution of Parental Occupational
Levels in Percentages for Vocational
and Non-Vocational Students



Summary and Conclusions

Summary

Comprehensive high schools were found to have scores higher than vocational schools for the following goal areas: self-esteem, understanding others, reading, writing skills, mathematics, interest in school and learning, societal responsibility, knowledge of law and government health and safety practices, career awareness, appreciating human accomplishments, knowledge of human accomplishments and information usage. Only in the area of creative activities did the vocational schools score higher than comprehensive high schools. In general, student scores followed the same pattern as the school scores. Creative activities and interest in school and learning were the two areas where vocational school and student scores approached the comprehensive high school and student scores. A significant difference was found between the vocational student and non-vocational student scores on all fourteen goal areas when t'tests were utilized.

An analysis of the school condition variables found significant differences between vocational and non-vocational student scores. Non-vocational students were characterized as having a significantly higher socio-economic status, higher occupational desires, higher percentage of female students, greater access to the library, smaller number of siblings, greater perceived parental interest in school, greater amount of time spent on homework, higher perceived parental expectations, higher perceived teacher expectations, greater amount of home reading materials and better perceived home climate. These results revealed some important differences between schools and students for vocational and non-vocational settings. It was not unexpected that vocational and non-vocational goal area scores differed considering the differences found in the school condition variables.

The correlations between goal area scores and school condition variables revealed: (1) there was a different statistical relationship between goal area scores and condition variables for vocational schools and comprehensive high schools, (2) the school correlations were much higher than the student correlations and (3) there was a different statistical relationship between goal area scores and condition variables for vocational students and non-vocational students. Based on the differences noted it seems that vocational schools and vocational students have unique characteristics and statistical relationships.

An analysis of socio-economic status and student goal scores was performed using a random sample of non-vocational students. The random sampling of non-vocational students replicated the distribution of vocational students on the socio-economic variable, parental occupation. Overall, a pattern of low cognitive scores and more negative attitudes was found in the vocational student scores. The greatest differences between vocational and non-vocational student scores were found in the higher socio-economic groups. These data indicated vocational schools were populated by a higher percentage of students with lower socio-economic status. Also, within socio-economic levels vocational schools were receiving students with lower cognitive scores and more negative attitudes.

Conclusions

The following conclusions were advanced based on the analysis of data:

(1) Vocational schools score lower than comprehensive high schools in thirteen of fourteen goal areas (Table 1).

(2) Full-time vocational schools score higher than all vocational schools for all fourteen goal areas (Table 1).

(3) Non-vocational students score significantly higher than vocational students in all fourteen goal areas (Table 3).

(4) Non-vocational students have a statistically significant advantage in all twenty-one school condition variables (Table 4). This finding contributes a logical reason for vocational scores to be lower than non-vocational scores. In some way students are sent or select to attend vocational schools thus resulting in less desirable school conditions.

(5) Vocational schools and vocational students have their own unique characteristics (Tables 5, 6, 7 and 8). Those characteristics result in statistical relationships between goal scores and school condition variables that are different from the comprehensive high schools.

(6) Students attending vocational schools are in general different from comprehensive high school students within socio-economic levels (Table 9). In fact, this occurs to the greatest degree for the higher socio-economic levels. That is, higher socio-economic vocational students score lower than higher socio-economic non-vocational students. This results in vocational schools operating at a double disadvantage. Vocational schools have a lower percentage of high socio-economic students. Plus, high socio-economic vocational student scores are much lower than high socio-economic non-vocational student scores.

It would seem to the authors that the vocational schools are doing rather well with the clients they serve. In informal interviews with vocational and comprehensive high school principals comments were made on the student selection process. Principals revealed there was variation among the comprehensive high schools and vocational schools in the process utilized to select students for

the vocational school. In some cases students of low ability or students that were discipline problems were encouraged to attend the vocational school. This may be correct based on the findings.

Another area of interest was the difference between full-time and part-time vocational school scores. Since the full-time scores were higher this may provide a topic that should be investigated. Whether the full-time vocational schools have programs, better students or some other factors that produced higher scores was unknown.

The fact that vocational students in high socio-economic levels were scoring much lower than the high socio-economic non-vocational students was interesting. Could the high socio-economic vocational students be special in some way resulting in their low scores? This would be a topic that vocational school administrators should investigate.

References

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Robinson, W.S. Ecological Correlations and the Behavior of Individuals. American Sociological Review, 1950, 15, pp. 351-357.

APPENDIX A

SUMMARY OF INSTRUMENTS

AREA	SCALE DESCRIPTION	NO. OF ITEMS	SAMPLE ITEMS	RESPONSE CHOICES
SELF-ESTEEM	Students are asked to relate their feelings of success and feelings of acceptance – primarily in the school setting.	32 (8)	I am able to mix well with other people. My teachers listen to what I have to say. I am good at picking out the right things to study. My classmates think I have good ideas.	SA = Strongly Agree MA = Mostly Agree MD = Mostly Disagree SD = Strongly Disagree
UNDERSTANDING OTHERS	Students are asked to respond to approaches and interactions with persons of differing skin color, religious beliefs, physical characteristics, socio-economic status or cultural tradition.	40 (10)	**Would you mind sitting in class beside a student who:** Has few friends because of the way he or she looks? Is very much like you, but whose skin color is different from yours? Is much poorer than you? Belongs to a religion which you do not belong to? Is from another country and doesn't speak English very well?	A = Yes B = I think so C = I don't know D = I don't think so E = No
COMMUNICATION SKILLS: READING COMPREHENSION	*Literal comprehension* - recognition of details or the main ideas explicitly stated. *Word meaning* - recognition of the appropriate meaning of a word in a given context. *Inferential comprehension* - response to items which require taking the meaning of a passage beyond explicit ideas.	48 (12)	[A wide variety of reading materials was used to cover the many different styles, purposes and types of content in written matter the reader encounters in school and leisure.]	[Four multiple-choice options]
COMMUNICATION SKILLS: WRITING SKILLS	A. *Mechanics and usage* - application of rules and conventions necessary for effective writing communication. B. *Sentence sense* - recognition of clear, concise and effective sentences. C. *Paragraph sense* - recognition of coherence, unity and transition in the organization and development of paragraphs and larger units. D. *Style, tone and flavor* - recognition of effective and appropriate language for a given purpose, audience or situation.	60 (15)	Choose the sentence which best fits the blank. There is definitely too much violence in sports. In basketball, players are often elbowed or knocked to the floor. In football, the object of the game is to tackle the person carrying the ball. _____. Even in baseball, it is possible to see fights between the teams. Choose the best way of writing the part of the sentence underlined. Not far from shore, the oil tanker was caught on a reef. The stormy <u>weather however kept</u> the Coast Guard cutter from reaching the troubled ship.	A In soccer, someone kicked my ankle one time. B Fans sometimes fight with one another. C In hockey, fighting between players is common. D Football games are exciting and full of action. A weather however kept B weather, however kept C weather however, kept D weather, however, kept

APPENDIX A
(CONTINUED)

AREA	SCALE DESCRIPTION	NO. OF ITEMS	SAMPLE ITEMS	RESPONSE CHOICES
HEALTH AND SAFETY PRACTICES	Students are to demonstrate that they have acquired habits and attitudes which increase the probability of remaining healthy, safe and fit throughout life.	48 (12)	The school permits students to use the gym after school. I want to use the trampoline but nobody wants to stand around to catch me if I fall. I would USE THE TRAMPOLINE ANYWAY... if I had done it before and nothing had gone wrong. if I thought that I was pretty good on the trampoline. if I thought that the others in the gym would not tell on me.	A = Definitely Would B = Probably Would C = Probably Would Not D = Definitely Would Not
CREATIVE ACTIVITIES **(Arts and Humanities and Science and Technology items)**	Students are asked to indicate frequency of participation in five areas: visual arts, performing arts, writing, science, and social and practical studies.	40 (10)	During the last three years, how many times have you done the following? Developed a new strategy or play for use in a sport? Created a sculpture? Written fiction such as a story or a scene from a play? Played a musical instrument in front of a class or a larger audience, using your own interpretation of the music?	A = Have not done the activity. B = Have done the activity once. C = Have done the activity 2 or 3 times. D = Have done the activity about 5 times. E = Have done the activity about 8 times (or more).
CAREER AWARENESS **(Work)**	The students are queried on their awareness of duties, training, abilities and educational requirements of various occupations, an understanding of the labor market conditions, and skills in gathering such data, such as knowledge of occupational clusters and publications.	40 (10)	The need to work with others as part of a team would be most important to a The job most likely to require a completed apprenticeship is a Unemployment rate is the highest in which age range? Today there is a great demand for, and a short supply of, women in	A psychiatrist. B movie editor. C writer. D fire fighter. A printer. B keypuncher. C chemical engineer. D landscaper. A 16-19 B 25-30 C 40-45 D 55-60 A law enforcement. B marine sciences. C consumer affairs. D retail sales.

APPENDIX A
(CONTINUED)

AREA	SCALE DESCRIPTION	NO. OF ITEMS	SAMPLE ITEMS	RESPONSE CHOICES
MATHEMATICS	Items measure mathematical concepts, computation and/or problem-solving.	60 (15)	[Items include questions about: number systems, numeration and notation, geometry, measurements, number pattern and relationships, and other topics]	[Four, multiple-choice options]
INTEREST IN SCHOOL AND LEARNING	Students are to display their feelings on the climate and learning atmosphere in the school, the educational experiences the school provides, the quality of the personal interactions it fosters between student and educator, and the students' attitudes toward learning.	40 (10)	I like learning social studies in this school. Many of my school assignments are a waste of time. My teachers are interested in how well I do my assignments. There are interesting activities to look forward to in this school.	SA = Strongly Agree MA = Mostly Agree MD = Mostly Disagree SD = Strongly Disagree
SOCIETAL RESPONSIBILITY (Citizenship)	Students are asked if they will assume responsibility for their actions and the actions of groups to which they belong, work cooperatively, demonstrate integrity when dealing with others, and take the initiative and assume leadership, as well as support group efforts as followers.	36 (9)	A student gets a dog. A city law requires that a $10 dog tag be bought by the dog's owner. In this situation, I would BUY THE TAG... if the dog might be more easily lost or stolen without a tag. if the fine for not having a tag was $25. since owners are responsible for their dogs.	Y = Yes M = Maybe N = No
KNOWLEDGE OF LAW/GOVERNMENT (Citizenship)	Three major areas of knowledge were identified as essential to good citizenship. They are broadly described as knowledge of government, knowledge of law and knowledge of interdependence of people.	48 (12)	Case law comes from The North Atlantic Treaty Organization (NATO) was formed to improve Which is a right guaranteed to all United States citizens?	A previous court decisions. B constitutional principles. C local customs. D unwritten tradition. A health standards and practices in member nations. B scientific research for economic development in member nations. C military defenses of member nations. D trade among member nations. A to practice the religion of one's choice B to choose who can live in the house next door C to have a job D to try to overthrow the government

APPENDIX A
(CONTINUED)

AREA	SCALE DESCRIPTION	NO. OF ITEMS	SAMPLE ITEMS	RESPONSE CHOICES
APPRECIATING HUMAN ACCOMPLISHMENTS **(Arts and Humanities and Science and Technology items)**	Student openness is displayed by a willingness to engage in listening, watching or reading activities relating to significant accomplishments. In addition, the student reaching the higher levels of openness will display willingness to learn about accomplishments and what is entailed in producing them.	64 (16)	**WOULD YOU WANT TO:** See a world-famous play? Talk to officials to learn about your local government? Read stories written by authors from other parts of the world? Learn more about what makes a movie great?	A = Definitely Would B = Probably Would C = Uncertain D = Probably Would Not E = Definitely Would Not
KNOWLEDGE OF HUMAN ACCOMPLISHMENTS **(Arts and Humanities and Science and Technology items)**	Students are asked to demonstrate recognition of persons, theories or ideas, works, inventions or phenomena. Students are expected to be able to recognize the names of prominent persons and concepts to which they should have been exposed within the school setting.	60 (15)	What area is most closely related to the following? N.A.T.O. SWAN LAKE RALPH BUNCHE LOUISA MAY ALCOTT GEORGE GERSHWIN NORMAN ROCKWELL EUCLID HOOKE'S LAW	M = Music or Dance S = Science, Math or Medicine V = Visual Arts L = Literature or Drama G = Government or Politics ? = Don't Know
INFORMATION USAGE **(Analytical thinking)**	Students are asked to show that they are able to examine problems in a logical way, to identify them properly, to seek whatever information is needed to establish facts, to be aware of the consequences of decisions, and to have the ability to choose courses of action which are most congruent with their own values and desires.	32 (8)	John will soon graduate from high school. He is thinking about going to college. His parents do not have enough money to pay for this. His uncle has offered him a job which pays well. John knows he would enjoy this job because he would learn a great deal about the kinds of things he would study if he went to college. But, John still wants to go to some kind of school. He reads an advertisement in a magazine about a training program offered by the ABC Training School. This school says that it has trained thousands of people for high-paying careers. The cost of their training program is $2,000. Which of the following is likely to be the least use to John in finding out how good the ABC training program is?	A Read more magazine advertisements about the school. B Contact the Better Business Bureau office nearest the school. C Talk to students who have graduated from the training program. D Talk to possible employers of the school's graduates.

Note: The number appearing in parenthesis indicates the number of items per form.

APPENDIX B

CONDITION VARIABLES

No.	VARIABLE AND COMPUTER CODE	MEASURE	WEIGHTING	INDEX DESCRIPTION
1	GRENROLL (Grade enrollment)	The school administrator reported enrollment of the grade under consideration. *	Actual number of students in the participating grade.	A higher value indicates a larger grade enrollment.
2	PCTTILI (Percentage of (Title I) low income students)	The percent of students by school reported to the Department (Title I) that are from low income families. (DEBE-1169)	Expressed to nearest tenth of a per cent.	A higher value indicates a higher per cent of students from low income families.
3	TUITION (Tuition rate)	The tuition rate established for the school districts was obtained from Department records.	Expressed to nearest whole dollar for 1980-81.	A higher value indicates that the district claims to expend relatively more funds per student.
4	TLOCALE (Teacher locale)	The teachers reported where they graduated from high school.	0= 100 miles or more from boundaries of the school district 1 = More than 30 miles but less than 100 mil. 2= In or within 30 miles	A higher value indicates that the school teaching staff is more often drawn from local areas.
5	TSATPAR (Teacher satisfaction with relationships with parents)	The teachers reported how satisfied they were with their relationships with parents and and parent groups	3 = Very satisfied 2 = Somewhat satisfied 1 = Somewhat dissatisfied 0 = Very dissatisfied	A higher score indicates a greater satisfaction of the teaching staff with the cooperation and contacts they have with parents and parent groups.
6	TEDUC (Teacher education)	The teachers indicated the level of formal education they have attained.	4 = Doctor's degree 3 = Master's degree plus 1 year 2 = Master's degree or equivalency 1 = Bachelor's degree 0 = No degree	A higher value indicates that the school's instructional staff reported a higher level of formal education.
7	TEXPER (Teacher experience)	The teachers reported the total years of service in teaching including the current school year.	Expressed as average years' experience.	A higher value indicates that the teachers of the school have relatively more years of teaching experience.
8	CLSIZE (Class size)	The teachers reported their average class size excluding supervisory duties such as study hall.	Expressed as average class size for all teachers.	A higher value indicates a greater average class size.
9	READTIME (Teacher estimation of reading instruction time) (Grade 5 only)	The teachers reported how many hours the average student spent in direct reading instruction in a typical week.	Expressed as average hours spent.	A higher value indicates a greater amount of time spent in direct reading instruction.
10	MATHTIME (Teacher estimation of mathematics instruction time) (Grade 5 only)	The teacher reported how many hours the average student spent in mathematics instruction in a typical week.	Expressed as average hours spent.	A higher value indicates a greater amount of time spent in mathematics instruction.

*For grade 11, this was taken from Department records for the previous school year.

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APPENDIX B
(CONTINUED)

No.	VARIABLE	MEASURE	WEIGHTING	INDEX DESCRIPTION
11	EXTRACT (Activities external to the classroom)	The teachers indicated the degree to which each of five statements about their interactions with students constitute a problem in their school.	3 = Not a problem 2 = Moderate problem 1 = Serious problem 0 = Critical problem	A higher score indicates that the teaching staff is more satisfied with their interactions with students.
12	TRELATE (Teacher/Student/Parent relationships)	The teachers indicated the degree to which each of nine statements about the interest of the students and the support and interaction with the parents constitute a problem in their school.	Same as EXTRACT	A higher score indicates that the teaching staff feels that the students and parents support and interact with the school more.
13	DISRUPT (Factors disruptive to classroom management)	The teachers indicated the degree to which each of eight statements about factors that affect classroom management in the school constitute a problem for them.	Same as EXTRACT	A higher value indicates that the teaching staff is more satisfied in classroom management situations.
14	INFLUENC (Teacher influence upon instructional decisions)	The teachers indicated the degree to which each of nine statements about their influence on learning conditions constitutes a problem in their school.	Same as EXTRACT	A higher value indicates that the teaching staff has a greater influence on decisions which affect the instructional processes.
15	TSTAFF (Staff interpersonal relationships)	The teachers indicated the degree to which each of three statements about staff interaction and support constitute a problem in their school.	Same as EXTRACT	The higher value indicates that the teaching staff and other school staff interact better.
16	DISCPROB (Discipline problems)	The teachers indicated the degree to which each of five statements about the discipline procedures of the school constitute a problem for them.	Same as EXTRACT	The higher value indicates that the teaching staff is more satisfied with the way discipline is handled in the school.
17	PAREDUC (Parental education)	The higher level of the following two was used: (1) The students reported the the highest level of formal education attained by their fathers or male guardians. (2) The students reported the highest level of formal education attained by their mothers or female guardians.	8 = Ph.D. or professional degree 7 = Some work toward Ph.D. or professional degree 6 = Master's degree 5 = Bachelor's degree 4 = Some college, vocational, business school after high school 3 = High school graduate 2 = Some high school, but not a graduate 1 = Completed grade school 0 = None or some grade school	A higher value indicates that the school draws students from homes in which at least one of the parents has a higher average level of formal education.

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APPENDIX B
(CONTINUED)

No.	VARIABLE	MEASURE	WEIGHTING	INDEX DESCRIPTION
18	PAROCC* (Parental occupation)	The highest level of the following two was used: (1) The students reported the occupation most like their fathers' or male guardians found on a list of 148 possible occupations and 6 special categories. (2) The students reported the occupation most like mothers' or female guardians (if employed) on the list of 148 possible occupations and 6 special categories.	The occupational categories were weighted from 1 to 99 according to a combination of education needed to secure the occupation and income derived from the occupation. The higher level was used to allow for family support by either the male or female parent.	A higher value indicates that the school tends to draw a large proportion of its students from homes where the higher level parent is employed in higher-paying jobs requiring higher educational levels.
19	OCDESIRE* (Occupational desire) (Grade 11 only)	From the list of 148 occupations mentioned above, the students reported the occupations most like those they wish to follow when finished in school.	Same weighting used in PAROCC above.	A higher value indicates that the students desire to attain higher paying jobs requiring a higher educational level.
20	OCEXPECT* (Occupational expectation) (Grade 11 only)	From the list of 148 occupations the students reported the occupations most like those they really expect to follow when finished in school.	Same weighting used in PAROCC above.	A higher value indicates the students expect to attain higher paying jobs requiring a higher educational level.
21	PCTGIRLS (Percent girls)	The students indicated their sex.	Expressed in percentage.	A higher value indicates that the school has a greater proportion of girls in the grade level.
22	RESIDE (Type of community)	The students with the aid of the monitor reported the types of communities in which they were then living.	7 = In Philadelphia or Pittsburgh 6 = Inside a large city (100,000 to 500,000 people.) 5 = Inside a medium size city (10,000 to 100,000) 4 = In a suburb of Philadelphia or Pittsburgh 3 = In a suburb of a large city 2 = In a suburb of a medium size city 1 = In a small town (less than 10,000 people.) 0 = In the open country or in a farming community.	A higher value indicates that the students reside in larger areas of dense population, i.e., more removed from open space.
23	PCTWHITE (Percent white students)	The students reported their race.	Expressed in percentage.	A higher value indicates that the school has a greater proportion of white students in the grade level.
24	LIBRARY (Accessibility of library)	The students reported how often they were able to use the school library.	3 = More than three times a week. 2 = Two or three times a week. 1 = Once a week 0 = Never	A higher score indicates that the students report greater accessibility of the library.

*The occupational weightings were updated and no direct comparisons of raw scores can be made to assessments conducted prior to 1978.

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APPENDIX B
(CONTINUED)

No.	VARIABLE	MEASURE	WEIGHTING	INDEX DESCRIPTION
25	STABLE (Stability of student residence)	The student reported the number of different school buildings attended within the past 3 years because family changed residence.	4 = My family has not moved within the past 3 years 3 = 2 school buildings 2 = 3 school buildings 1 = 4 school buildings 0 = 5 or more school buildings	A higher value indicates that the students come from families which are more stable.
26	FAMSIZE (Family size)	The students reported the number of brothers and sisters they have.	Expressed as average number of siblings.	A higher value indicates that the students of the school come from larger families.
27	FAMORDER (Family order)	The students reported the number of older brothers and sisters they have.	0 = 2 1-2 = 1 3-9 = 0	A higher value indicates that the students of the school are more likely to be the eldest in their families.
28	SPARINT (Student perception of parental interest in school)	The students reported their opinions on three items: (1) My parents enjoy hearing about school. (2) My parents feel the school is doing a good job. (3) My parents support what the school does.	3 = Almost always 2 = Usually 1 = Sometimes 0 = Almost never	A higher value indicates that the students felt their parents have a great interest in the school, a higher opinion of the work of the school, and greater support of the school.
29	HOMEWORK (Amount of homework)	The students reported their estimates of time usually spent on homework from the time they get home from school until they go to bed.	4 = About three hours or more 3 = About two hours 2 = About one hour 1 = Less than one hour 0 = None	A higher value indicates that students of the school spent more time on homework on school nights.
30	TVWATCH (Student time spent watching television)	The students reported their estimates of time usually spent watching television from the time they get home from school until they go to bed.	4 = About five hours or more 3 = About four hours 2 = About three hours 1 = About two hours 0 = About one hour or less	A higher value indicates that students of the school watch more television on school nights.
31	PAREXP (Student perception of parental expectations) (Grades 8 and 11 only)	The students reported their perceptions on: (1) What do your parents encourage you to do? (2) How much schooling do your parents expect you to complete?	For item 1: 3 = To be one of the best students in the class 2 = To be above average student in the class 1 = To be at least an average student 0 = To do just well enough to get by. For item 2: 4 = Beyond college graduation 3 = Graduation from college 2 = Some college or other post-high school training 1 = Graduation from high school 0 = Some high school	A higher score indicates that the students feel that their parents expect them to do well in school and expect them to achieve higher educational levels.

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No.	VARIABLE	MEASURE	WEIGHTING	INDEX DESCRIPTION
32	EDEXPECT (Student educational expectations) (Grades 8 and 11 only)	The students reported how far they expect to go in school.	4 = Beyond college graduation 3 = Graduation from college 2 = Some college or other post-high school training 1 = Graduation from high school 0 = Some high school	A higher score indicates that the students of the school have higher educational expectations.
33	STEACHEX (Student perception of teacher expectations) (Grades 8 and 11 only)	The students reported their perception of their teachers' expectations of them.	3 = One of the best students in the class 2 = Above average in the class 1 = At least an average student 0 = A below average student	A higher score indicates that the students of the school feel that teachers expect more effort from them.
34	HOMEREAD (Reading material in the home)	The students reported on five items the amount of reading materials in the home.	Each item was assigned a weight for the amount of that type of reading materials in the home.	The higher value indicates the students report more reading materials in the home.
35	HOMECLIM (Home climate)	The students reported their opinions on 12 items about home conditions. (3 per form)	Very true of me Mostly true of me Mostly untrue of me Very untrue of me	A higher value indicates that the students have more favorable attitudes toward their home conditions.

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